

CLAIMS

1. A holding device for holding at least one receiving  
means (9), provided for receiving a biological  
5 specimen, in a container (10, 11),  
having a holding portion (1) for arrangement  
externally of the container (10, 11) and movable  
relative to the container (10, 11), and  
having a receiving portion (4) for arrangement in the  
10 container (10, 11), which receiving portion is  
designed to hold the at least one receiving means (9),  
wherein the holding portion (1) and the receiving  
portion (4) are coupled in contactless manner in such  
a way that the receiving portion (4) is held in the  
15 container (10, 11) via the holding portion (1) and may  
be positioned relative to the container (10, 11) by  
moving the holding portion (1).
2. A holding device according to claim 1, characterised  
20 in that  
the receiving portion (4) is designed to hold the at  
least one receiving means (9) designed as collecting  
vessel for collecting a biological specimen recovered  
using laser microdissection from biological material  
25 (15) to be arranged in the container (10, 11).
3. A holding device according to claim 1 or claim 2,  
characterised in that  
the holding device with the holding portion (1) and  
30 the receiving portion (4) is designed for performing  
laser microdissection in the closed container (10, 11)  
with regard to biological material (15) to be arranged  
in the closed container (10, 11).

4. A holding device according to any one of the preceding claims, characterised in that  
the receiving portion (4) is designed to hold at least  
5 one cap-type receiving means (9) for accommodating a biological specimen in the container (10, 11).
5. A holding device according to any one of the preceding claims, characterised in that  
10 the receiving portion (4) is designed to hold a plurality of receiving means (9) in the container (10, 11).
6. A holding device according to any one of the preceding  
15 claims, characterised in that  
the receiving portion (4) to be arranged in the container (10, 11) is made from a material which does not impair the biological properties of a biological specimen received by the at least one receiving means  
20 (9), which is held by the receiving portion (4) in the container (10, 11).
7. A holding device according to any one of the preceding claims, characterised in that  
25 the holding portion (1) and the receiving portion (4) are made from a plastics material.
8. A holding device according to any one of the preceding claims, characterised in that  
30 the receiving portion (4) is made from polytetrafluoroethylene.

9. A holding device according to any one of the preceding claims, characterised in that the holding portion (1) is made from polytetrafluoroethylene.
- 5
10. A holding device according to any one of the preceding claims, characterised in that the holding portion (1) is coupled with the receiving portion (4) in contactless manner by a magnetic coupling (3, 7).
- 10
11. A holding device according to any one of the preceding claims, characterised in that the holding device is so designed that it allows good illumination of biological material (15) located in the container (10, 11) and/or good illumination of the biological specimen received in the receiving means (9).
- 15
- 20 12. A combination of a container (10, 11) and a holding device according to any one of the preceding claims for holding in the container (10, 11) at least one receiving means (9), provided in the container (10, 11), for receiving a biological specimen.
- 25
13. A combination according to claim 12, characterised in that the container takes the form of a Petri dish.
- 30 14. A combination according to claim 12 or claim 13, characterised in that

the container comprises a main body (10) with a base for biological material (15) and a cover (11) for covering and closing the main body (10).

- 5 15. A combination according to claim 14, characterised in that  
the base of the main body (10) comprises a first membrane (13), which is laser light-transmitting, and, arranged on the first membrane (13), a second membrane  
10 (14) which is laser light-transmitting.
16. A laser microdissection system (20) having a holding device according to any one of claims 1-12.
- 15 17. A laser microdissection system according to claim 16, characterised in that  
the laser microdissection system (20) is designed for computer-assisted positioning of the receiving portion (4) in the container (10, 11) by computer-assisted  
20 adjustment of the holding portion (1) of the holding device.
18. A method for holding at least one receiving means (9), which is provided for receiving a biological specimen,  
25 in a container (10, 11), comprising the steps of  
a) arranging a receiving portion (4), which is designed to hold the at least one receiving means (9), in the container (10, 11),  
b) arranging a holding portion (1) externally of the  
30 container (10, 11), and  
c) positioning the receiving portion (4) in the container (10, 11) by means of contactless coupling between the holding portion (1) and the receiving

portion (4) by moving the holding portion (1) relative to the container (10, 11), wherein the receiving portion (4) is held in the container (10, 11) by the holding portion (1) by means of the contactless  
5 coupling.

19. A method according to claim 18, characterised in that in step b) the holding portion (1) is arranged externally of the container (10, 11) in the vicinity  
10 of the receiving portion (4) located in the container (10, 11).

20. A method according to claim 18 or claim 19, characterised in that  
15 in step a) the receiving portion (4) is arranged on the inside of a cover (11) of the container, and in step b) the holding portion (1) is arranged on the outside of the cover (11).

20 21. A method according to claim 20, characterised in that, after arrangement of the receiving portion (4) on the inside of the cover (11) and of the holding portion (1) on the outside of the cover (11), the arrangement consisting of the holding portion (1), the cover (11)  
25 and the receiving portion (4) is combined in such a way with a main body (10) of the container that the cover (11) covers the main body (10) and the receiving portion (4) on the inside of the cover (11) is arranged inside the container formed by the main body  
30 (10) and the cover (11).

22. A method according to any one of claims 18-21, characterised in that

the receiving portion (4) is sterilised before step a) is performed.

23. A method according to any one of claims 18-22,  
5 characterised in that  
the holding portion (1) and the receiving portion (4)  
form a holding device according to any one of claims  
1-11.
- 10 24. A method for laser microdissection in a container (10,  
11), characterised in that  
at least one receiving means (9) for receiving a  
biological specimen detached by means of laser  
microdissection from biological material (5) located  
15 in the container (10, 11) is held by means of a method  
according to any one of claims 18-23 in the container  
(10, 11), and in that the at least one biological  
specimen is detached by laser microdissection from the  
biological material (15) located in the container (10,  
20 11) and received by the at least one receiving means  
(9) held in the container (10, 11).
25. A method according to claim 24, characterised in that  
the method is performed in computer-assisted manner.  
25
26. A method according to claim 24 or claim 25,  
characterised in that,  
to perform the method, a holding device according to  
any one of claims 1-11 is used to hold the at least  
30 one receiving means (9) in the container (10, 11).
27. A method according to any one of claims 24-26,  
characterised in that,

to perform laser microdissection, a combination of the closed container (10, 11) and a holding device (1, 4) according to any one of claims 12-17 is used.